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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BANH, DAVID H

ART UNIT

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2854

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,900	Applicant(s) VANDERMEULEN, KRIS	
	Examiner DAVID BANH	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14 and 21-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14 and 21-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 3, 2010 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 14 and 21-37 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 14, 21, 25-28, 30, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hongo et al. (US Patent 5,172,137) in view of Cassiano (US PG Pub 2002/0110395).

For claims 14 and 25 Hongo et al. teaches a printhead assembly **1** comprising a thermal print head **9**, a platen **11**, a support **2, 5, 6** (see Fig. 1, the wall of the printer is the support), frame **3** slideably connected to the support (see Fig. 2, the frame **3** moves up and down by movement of the gear **17**), the print head **9** being mounted on the first frame **3**, a second frame

Art Unit: 2854

(see Fig. 2, the shaft supporting the platen **11**), the platen **11** being mounted on the second frame and a driver **19** for driving the first frame **3** relative to the support **5, 6** to cause the print head **9** to move in a linear direction toward the platen **11** (see column 4, lines 57-62 and column 1, lines 60-65), and via the movement actuated by the driver, the pressure applied to the substrate can be controlled (see column 1, lines 60-65, the position of the print head directly controls the pressure). Hongo et al. does not teach a compressor arranged to compressibly support the second frame such that it exerts a biasing force on the platen when one of the print head and the platen abuts said image receiving substrate and the driver drives the first frame relative to the support and towards the second frame such that a pressure applied to the image receiving substrate by one of the print head and platen can be controlled.

However, Cassiano teaches a compressor **53, 55** arranged to support a lower frame **45**, carrying a platen **43** (column 4, lines 60-67 and column 5, lines 1-3) so that the displacement is shared between the printing head **20** and the contrasting bar frame and platen **45, 43**. It would have been obvious to one of ordinary skill of the art at the time the invention was made to provide a compressor for biasing a platen disposed on the second frame for the purpose of allowing the lower frame to accommodate for pressure forces and to reduce any hard contact between the print head and the platen.

Particularly, for claim 25, operating the print head assembly of Hongo et al. and Cassiano necessarily involves driving the first frame to move the print head in a linear direction toward the platen to exert a biasing force on the print head, contact the print head and platen with the substrate and adjust the pressure applied onto the substrate (see Hongo et al., column 3, lines 45-60).

Art Unit: 2854

For claim 21: The combination of Hongo et al. and Cassiano teaches the print head assembly of claim 14 wherein Hongo et al. teaches that the print head **9** is mounted on the first frame **3** (see Fig. 2).

For claim 26: The combination of Hongo et al. and Cassiano teaches the method of claim 25 wherein the thermal head is adjusted to a predetermined location in accordance with the sheet to be used (see column 3, lines 47-51).

For claims 27 and 28: The combination of Hongo et al. and Cassiano teaches the assembly of claims 14 and 25 wherein the driver **19** (see Hongo et al.) is for driving the first frame relative to the support in accordance with information stored with the image-receiving substrate (see column 3, lines 47-51 of Hongo et al., the driving is in accordance with the condition of the substrate which is information, information is information about the substrate so it can be considered stored with the substrate, although not necessarily as a part of the substrate).

For claim 30: The combination of Hongo et al. and Cassiano teaches the assembly of claim 14 wherein the driver is for driving the first frame relative to the support to a predetermined position (see column 3, lines 47-51 of Hongo et al., the position is determined based on the condition of the substrate, which is determined before the driving).

For claim 36: The combination of Hongo et al. and Cassiano teaches all of the limitations of claim 36 except that the second frame is slidably connected to the support. However, providing the second frame as slidably connected to the support is accomplished with the duplication of the parts provided to make the first frame slideably on the support. Provision of the slideable first frame for the print head in Hongo et al. is done for the purpose of adjusting the spacing between the platen and print head. Providing a slideable frame for the platen would

Art Unit: 2854

accomplish the same goal of allowing the platen and print head gap to be adjusted. MPEP Section 2144.04 Section VI holds that both Reversal of Parts and Duplication of Parts would be obvious expedients to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to duplicate the sliding frame of Hongo et al. and provide it as the second frame to support platen for the purpose of allowing adjustments to the print head and platen gap and the pressure between the two elements to be effected on either the print head or platen end.

For claim 37: The combination of Hongo et al. and Cassiano teaches the assembly of claim 14 and Cassiano teaches that the second frame **45** is mounted on a base **59**, wherein the compressor **55** is between the base and the second frame **45** (see Fig. 5).

5. Claims 22 and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hongo et al. (US Patent 5,172,137) in view of Matsui et al. (JP 60-018377).

For claims 22 and 34: Hongo et al. teaches a printing device comprising a print head **9** arranged to print on a substrate (see Fig. 1 and Fig. 5), a platen **11**, a support **2, 5, 6** (see Fig. 1, the wall of the printer is the support), frame **3** slideably connected to the support (see Fig. 2, the frame **3** moves up and down by movement of the gear **17**), the print head **9** being mounted on the first frame **3**, a second frame (see Fig. 2, the shaft supporting the platen **11**), the platen **11** being mounted on the second frame and a driver **19** for driving the first frame **3** relative to the support **5, 6** to cause the print head **9** to move in a linear direction toward the platen **11** (see column 4, lines 57-62 and column 1, lines 60-65), and via the movement actuated by the driver, the pressure applied to the substrate can be controlled (see column 1, lines 60-65, the position of the print head directly controls the pressure). Hongo et al. does not teach a detecting device for

Art Unit: 2854

detecting information stored with the image receiving substrate, and a processor configured to use a look up table to determine a distance to drive the first frame relative to the support based on the information. However, Matsui et al. teaches a detecting device **4** for detecting information stored with a substrate (see Translated Abstract, an input device **4** senses data relating to the substrate, a data input device is also an information detecting device since it activates and relays information when information is present) that is used with a print head gap controlling part **1, 6** (see Translated Abstract, the computer **1** releases data based on the paper thickness and adjustment needed by comparing at memory, the computer is a processor and processor accessed memory is a type of look-up table) to determine the adjustment of a printing head gap in conjunction with a memory (see Translated Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an information detecting device for detecting information store with the image receiving substrate and a processor to determine the adjustment of the print head gap for the purpose of automatically controlling the spacing and pressure between the print head and platen for a plurality of paper types and thicknesses.

For claim 31: The combination of Hongo et al. and Matsui teaches the device of claim 22 wherein Matsui teaches that the information is stored as a bar code (see Translated Abstract, the “customer code” is the information inputted).

For claims 32 and 35: The combination of Hongo et al. and Matsui teaches the device of claims 22 and 34 wherein the information specifies the thickness of the substrate (see Translated Abstract, the information corresponds to paper thickness information).

Art Unit: 2854

For claim 33: The combination of Hongo et al. and Matsui teaches the device of claim 22 wherein and Matsui teaches that microprocessor (see Translated Abstract, also the microprocessor is the same processor as before), configured to detect the information stored with the substrate and consult a look-up table (see Translated Abstract, memory as before, the detected information is the content of duty inputted), to determine the distance to drive the first frame relative to the support (see Translated Abstract, determining the printer head gap).

6. Claims 23, 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hongo et al. (US Patent 5,172,137) in view of Cassiano (US PG Pub 2002/0110395) and Shiga et al. (JP 57-163588)

For claim 23: Hongo et al. teaches a printhead assembly **1** comprising a thermal print head **9**, a platen **11**, a support **2, 5, 6** (see Fig. 1, the wall of the printer is the support), frame **3** slideably connected to the support (see Fig. 2, the frame **3** moves up and down by movement of the gear **17**), the print head **9** being mounted on the first frame **3**, a second frame (see Fig. 2, the shaft supporting the platen **11**), the platen **11** being mounted on the second frame and a driver **19** for driving the first frame **3** relative to the support **5, 6** to cause the print head **9** to move in a linear direction toward the platen **11** (see column 4, lines 57-62 and column 1, lines 60-65), and via the movement actuated by the driver, the pressure applied to the substrate can be controlled (see column 1, lines 60-65, the position of the print head directly controls the pressure). Hongo et al. does not teach a compressor arranged to compressibly support the second frame such that it exerts a biasing force on the platen when one of the print head and the platen abuts said image receiving substrate and the driver drives the first frame relative to the support and towards the

Art Unit: 2854

second frame such that a pressure applied to the image receiving substrate by one of the print head and platen can be controlled.

However, Cassiano teaches a compressor **53, 55** arranged to support a lower frame **45**, carrying a platen **43** (column 4, lines 60-67 and column 5, lines 1-3) so that the displacement is shared between the printing head **20** and the contrasting bar and platen **43, 45**. It would have been obvious to one of ordinary skill of the art at the time the invention was made to provide a compressor for biasing platen disposed on the second frame for the purpose of allowing the lower frame to accommodate for pressure forces and to reduce any hard contact between the print head and the platen.

The combination of Hongo et al. and Cassiano does not teach an input device for inputting data. However, Shiga et al. teaches ensuring good printing quality by adjusting the space between platen and print head with inform from a detection means detecting the thickness of the paper (see Translated Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the print head assembly of Hongo et al. and Cassiano with a detecting device for detecting thickness information of paper, which would constitute an input device for inputting data for the purpose of ensuring good print quality by automatic adjustment of the gap between print head and platen.

For claim 24: The combination of Hongo et al., Cassiano and Shiga et al. teaches the printer of claim 23 and Shiga et al. teaches adjusting the gap between the platen and print head based on the thickness of the paper which is supplied as input data (see Translated Abstract), therefore, the driver which moves the first frame drives the first frame to a position determined with input data.

Art Unit: 2854

For claim 29: The combination of Hongo et al. and Cassiano teaches the assembly of claim 14 but does not teach driving the frame relative to said support in accordance with information inputted through an input device. However, Shiga et al. teaches ensuring good printing quality by adjusting the space between platen and print head with inform from a detection means detecting the thickness of the paper (see Translated Abstract, further the detected data is an input means for the printer). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the print head assembly of Hongo et al. and Cassiano with a detecting device for detecting thickness information of paper, which would constitute an input device for inputting data for the purpose of ensuring good print quality by automatic adjustment of the gap between print head and platen.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID BANH whose telephone number is (571)270-3851. The examiner can normally be reached on M-F 9:30AM - 8PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2854

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DHB
August 17, 2010

/Daniel J. Colilla/
Primary Examiner
Art Unit 2854